Missouri Botanical Garden
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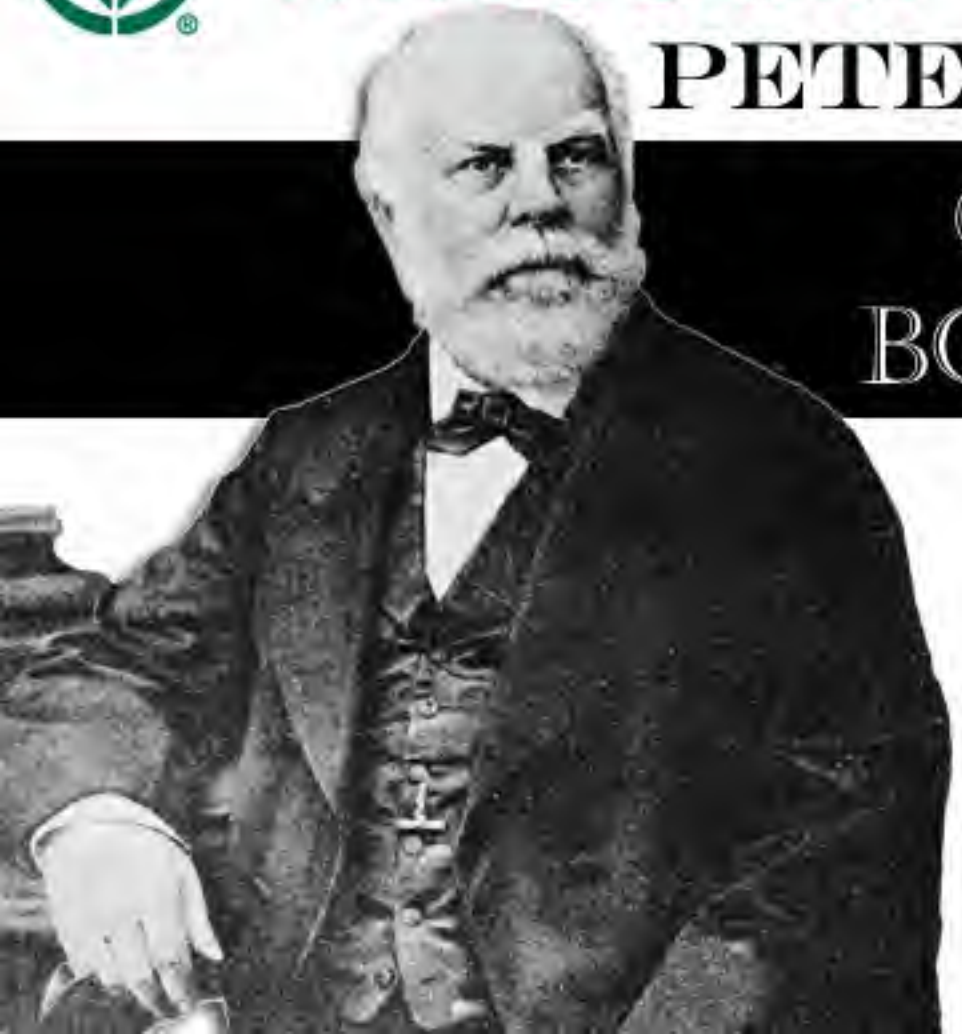

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17 tab

Abies sp

Cotyledons & first leaves.

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cm
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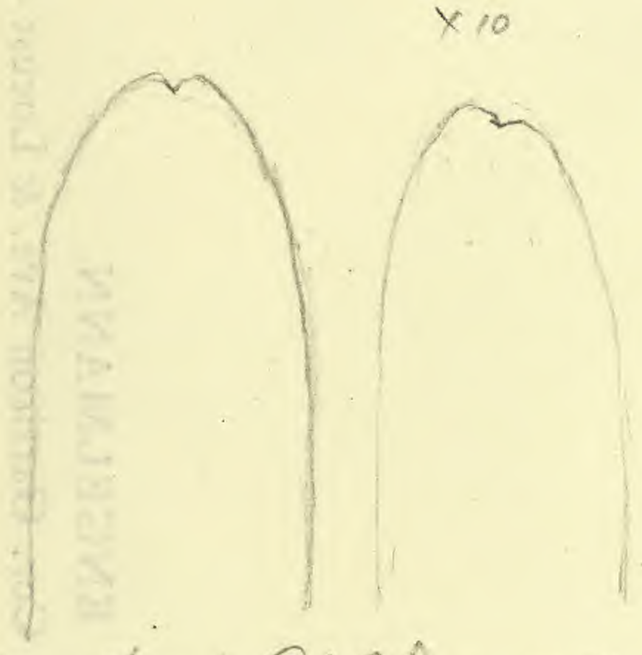
Abies balsamea

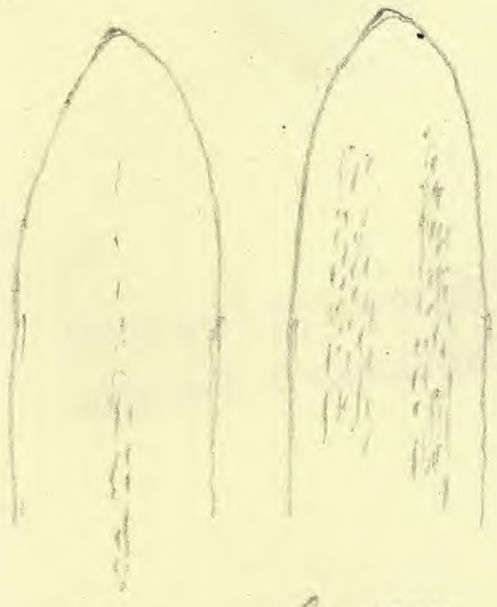
July 21 1878

seedlings raised by R Douglas, Warkey &c.

3 Cotyl. 4 times
4 — 15 "
5 — 1 "
20 specimens



× 10



first leaves, seedlings

tip of Cotyledon × 10

upper side

lower Sides of stem

Cotyl 13–17 mm long, 1.5–1.8 wide

less stomata

keel

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GEO. B. FRESE & CO'S,

No. 3005 Olive Street,

Near Garrison Av. ST. LOUIS.

Prescription Store,

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Prescribed by

DR. GEO. ENGELMANN,

N. W. Cor. Garrison Ave. & Locust St.,

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Abies balsamea

OL 4 1878

x10

ex Canada seeds - at Wankegan

A. Douglas

4 Cotyledons 12 lines

5 3

first leaves obtuse

upper Rocky Mts

Cotyl. 5-7 lines long, slightly notched or sometimes obtuse almost

seed leaves to form a verticil alternating with Cotyledons - or to count as one with the succeeding leaves - probably owing to the rapidity or vigor of development

seed leaf x30

mostly with a duct 2, but marginal

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Druggist,

301 South Fifth, S. W. Cor. 5th & Myrtle, St. Louis, Mo.

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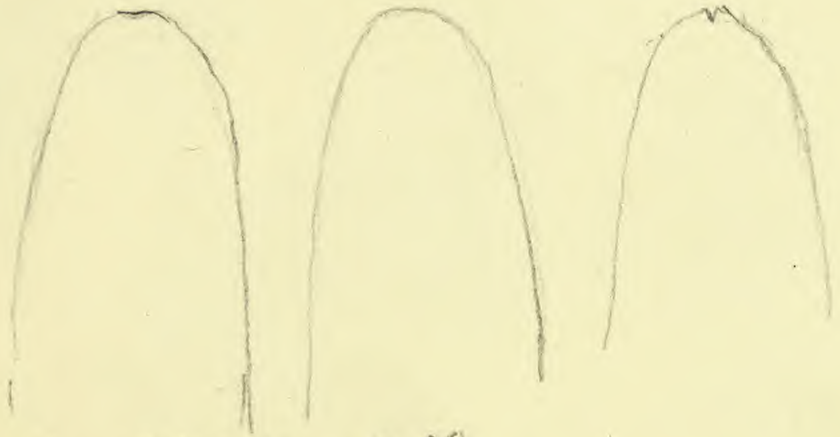
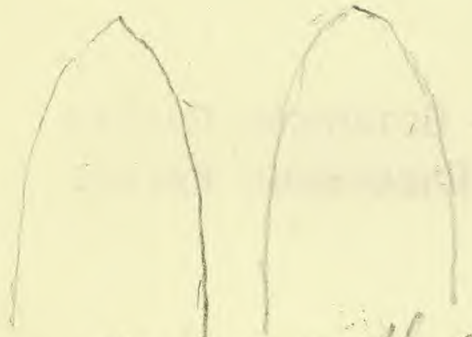
Oct 6 1878

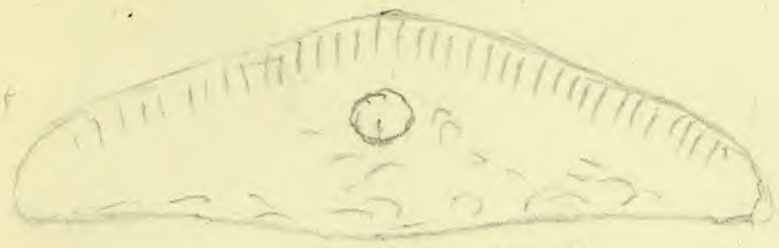
Abies balsamea ?
det'd now "Picea"
from Canada
coll'd by
R Douglas.



4 Cotyledons × 10
obtuse or obtuse
scarcely emarginate or notched



very leaves mostly acute



sect of Cotyl. × 30

sect of very young leaf × 30
sometimes with a duct marginal

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Abies grandis ?

Abies grandis

Laramie Mountains

Sept 6 1870

Dr Hayden Aug 24 1859

Scales not fimbriate

scales 15–16 : 12–14 mm

= 2½ : 2

seed 5½ : 3½

external valve covering

external half of seed

ridged almost as long

as seed

× 2

8½ 8 8 7½

9 8 9 9

5½ 6 6 6

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ALEX. LEITCH,

THE [illegible] CONSTANTLY ON HAND

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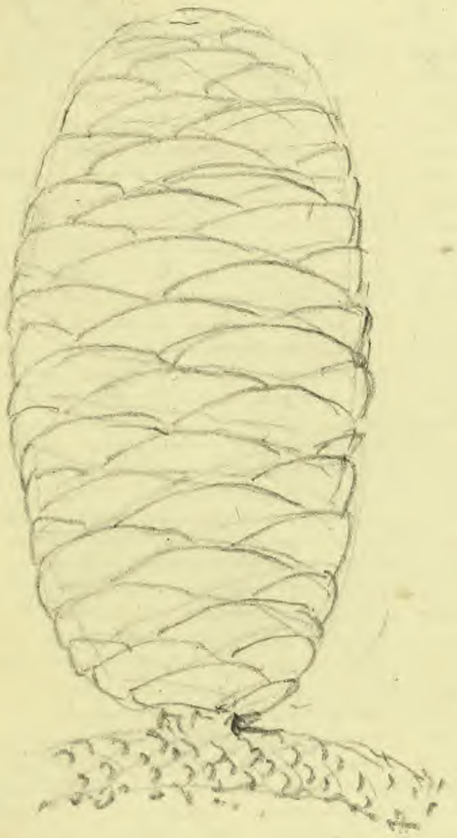
Cover

Abies grandis ?

Laramie Mtns Dr Hayden Jan 1862



axis of cone

outside of scale with seeds & bract

inside of scale with seed

inside of a scale without seeds covering another one containing seeds

ALEX. LEITCH,
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APOTHECARY & CHEMIST,
Cor. 4th and Olive Sts., St. Louis.
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M. W. ALEXANDER,
SOUTH-EAST CORNER OF FOURTH AND MARKET STREETS,
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12752

A. grandis
m. foliis acuta, basi vix angustata
comp. A. amabilis

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Tube 186

Abies grandis

Sept 7 1870

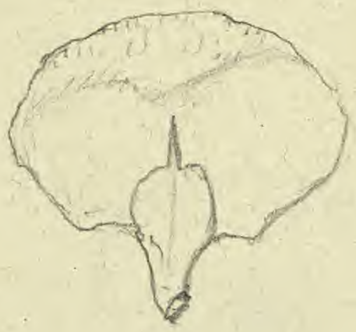
Colorado, Dr Parry 1862

South Park 11,000 alt

Scale

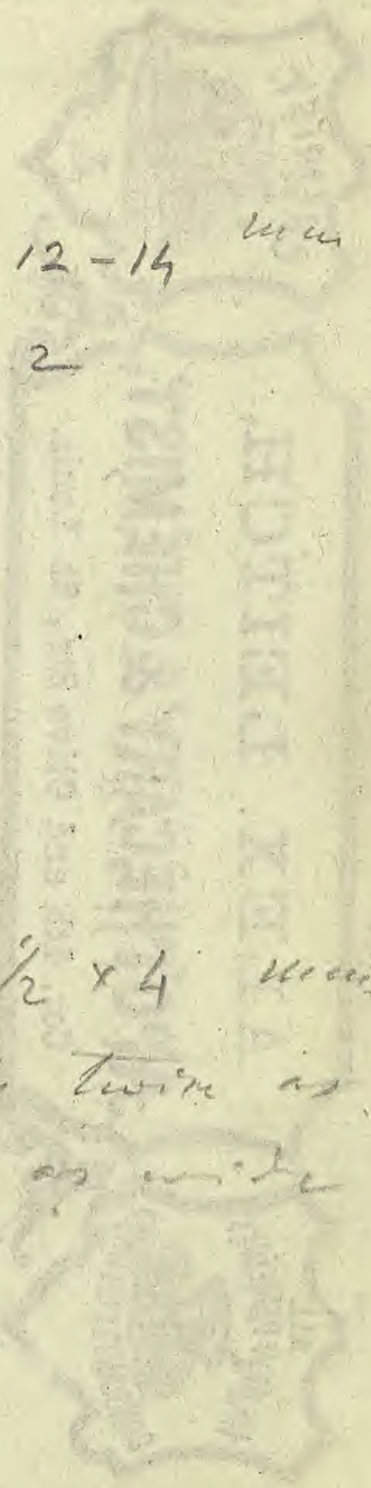
19-21 × 12-14 mm

3 : 2



seed 7½ × 4 mm

nearly twice as long as wide



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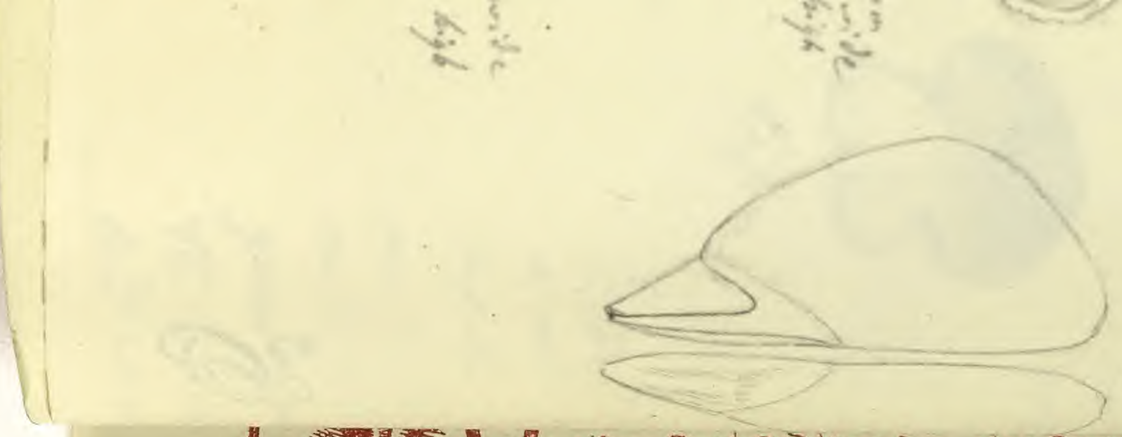

CONSTANTLY ON HAND

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cm
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Febr 1865

Abies grandis

Dr Parry 1862 Iowa

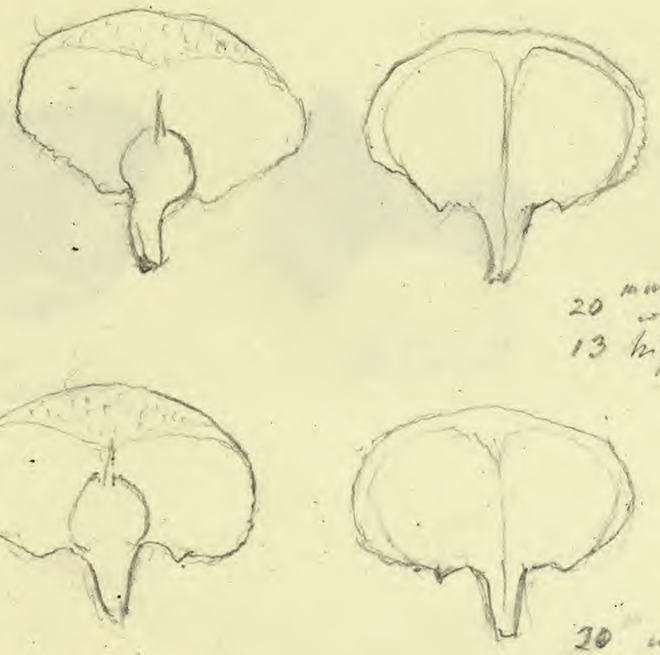
Abies grandis

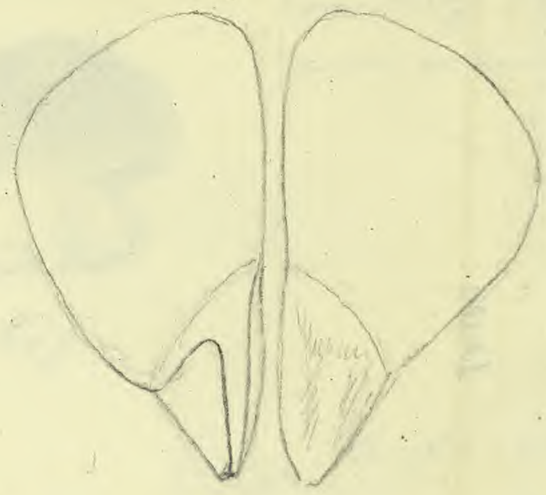
Squamis transversis

Colorado 1862 Dr Parry

Idaho Dec 12 1874

U.C





wing 9 mm wide
9 long
seed 7½-8 long

if removed

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cm
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Abies grandis
Colorado Dr Parry 1862 June

Febr 1865

0.05

× 280

re measured July 1874 $\frac{34.5}{280} = 0.12^{m}$

$\frac{30-36}{28} = 0.11-13$

anterior. (purple
part of anther seen
break away al
leaving the pedu
more or less prom

× 10

front or top view

basal

lateral

top

Every leaf sec
a male ament
axil
male flowers
axils of leaves
years — near the
the Branches —
bud not yet de

× 4

resinous
bracts

scar where leaf
is removed

187

Date

No. 82

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cm
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28 / 24.5 / 0.12 / 20/20 / 11 / 36/38/80 / 13

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M. W. ALEXANDER,
SOUTH-EAST CORNER OF FOURTH AND MARKET STREETS,
ST. LOUIS.

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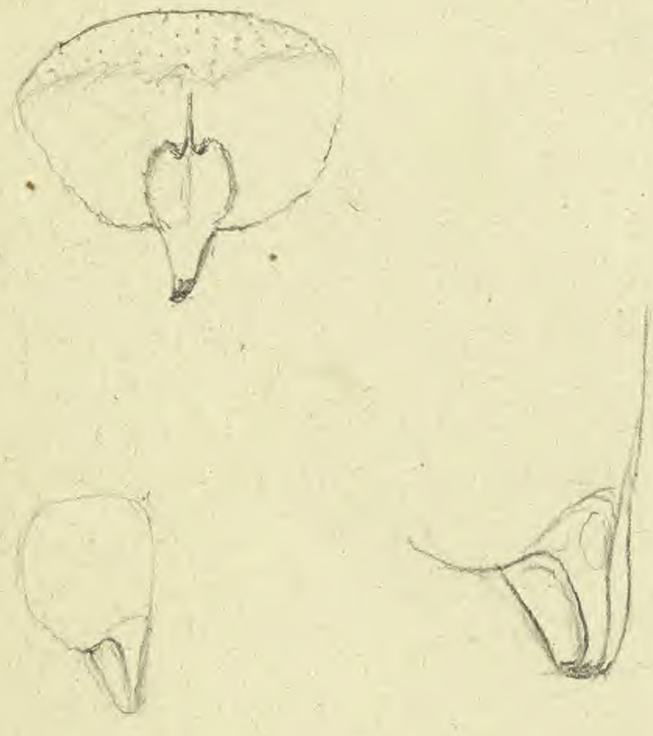
Abies grandis Sept 7 1870

Montana, C G Swallow, 1867



Scale 20 × 13 mm
= 3 : 2

Seed 8 × 4 mm
twice as long as wide

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cm
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cm
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form of seed
and wing
reconstructed from
an impression of
the scale

Tornata

Medium Bow Utah

H Engelm

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cm
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BOTANICAL GARDEN
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1378757

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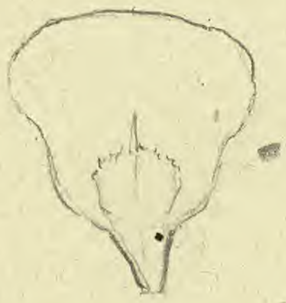
Abies grandis

Sept 9 1870

Medicine Bow Mountains

H. Engelmann

Aug. 1856



single scale seen
perhaps from a lower
part of cone

15 × 13 mm

2⅓ : 2

form of seed
and wing
reconstructed from
the impression of
the scale

BOTANICAL GARDEN
GEORGE ENGELMANN PH

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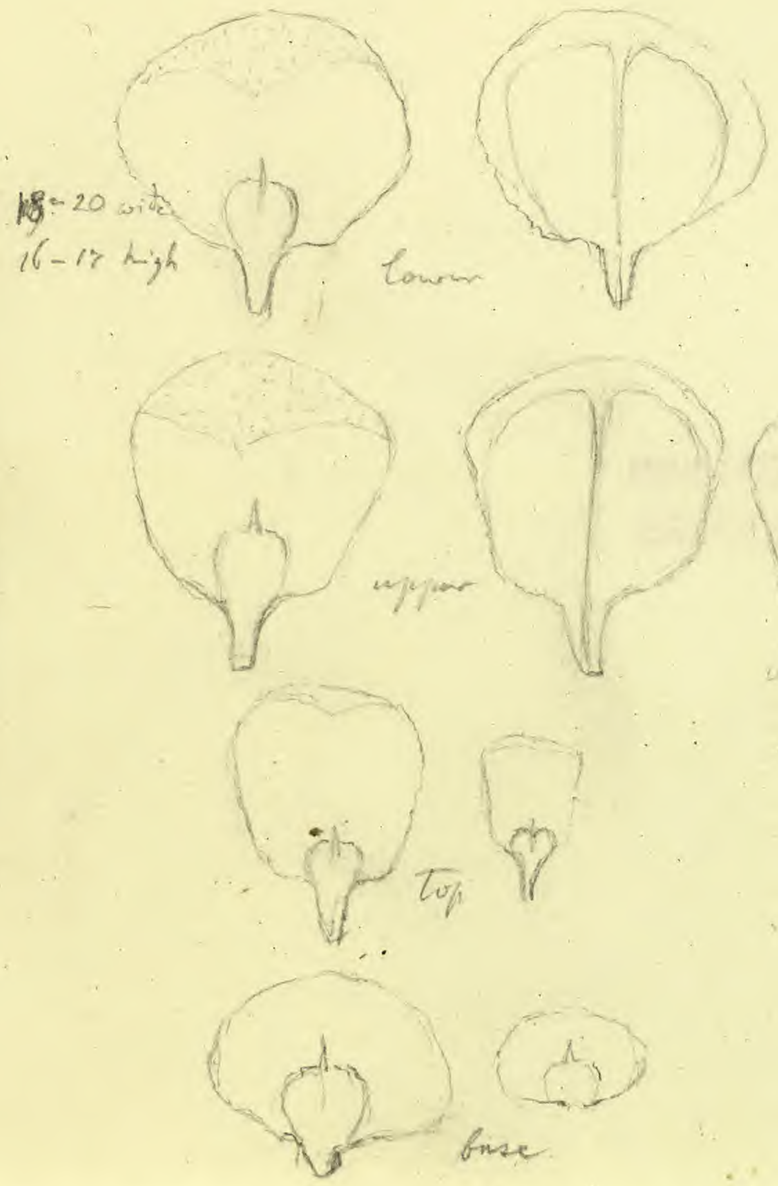
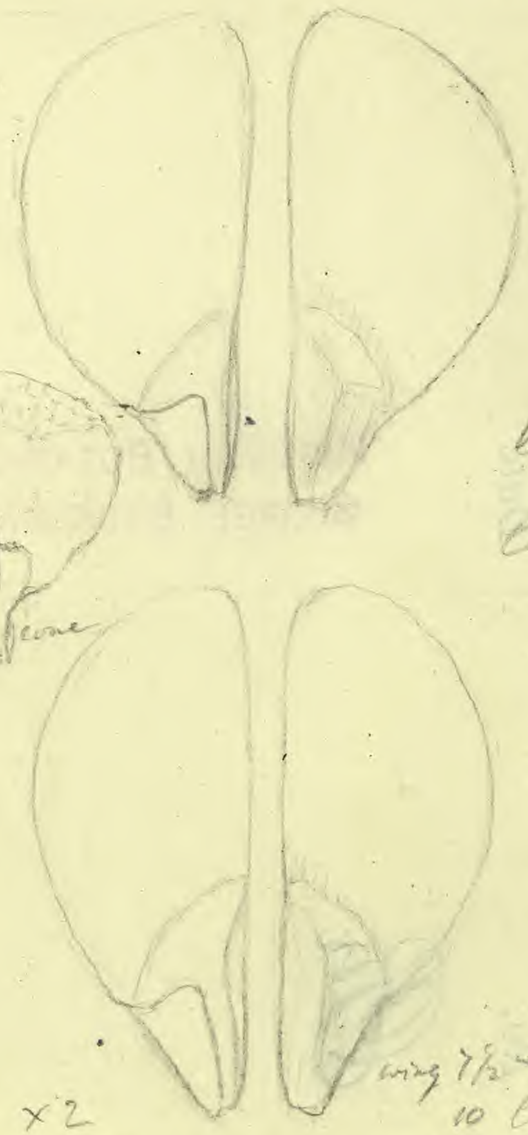
Abies grandis

Dec 9 '14

Cones sent by J. E. Johnson, St George, Utah



× 2



8.10.7

wing 8 mm wide
10 long
seed 7 long

Wing not dark
= 11 mm
Longer than wide

× 2

wing 7½ wide — 6 mm
10 long — 10
seed 8 long — 8

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HENRY EHRHARDT,

PHARMACEUTICAL CHEMIST,

No. 301 South Fifth Street, Cor. Myrtle, ST. LOUIS.

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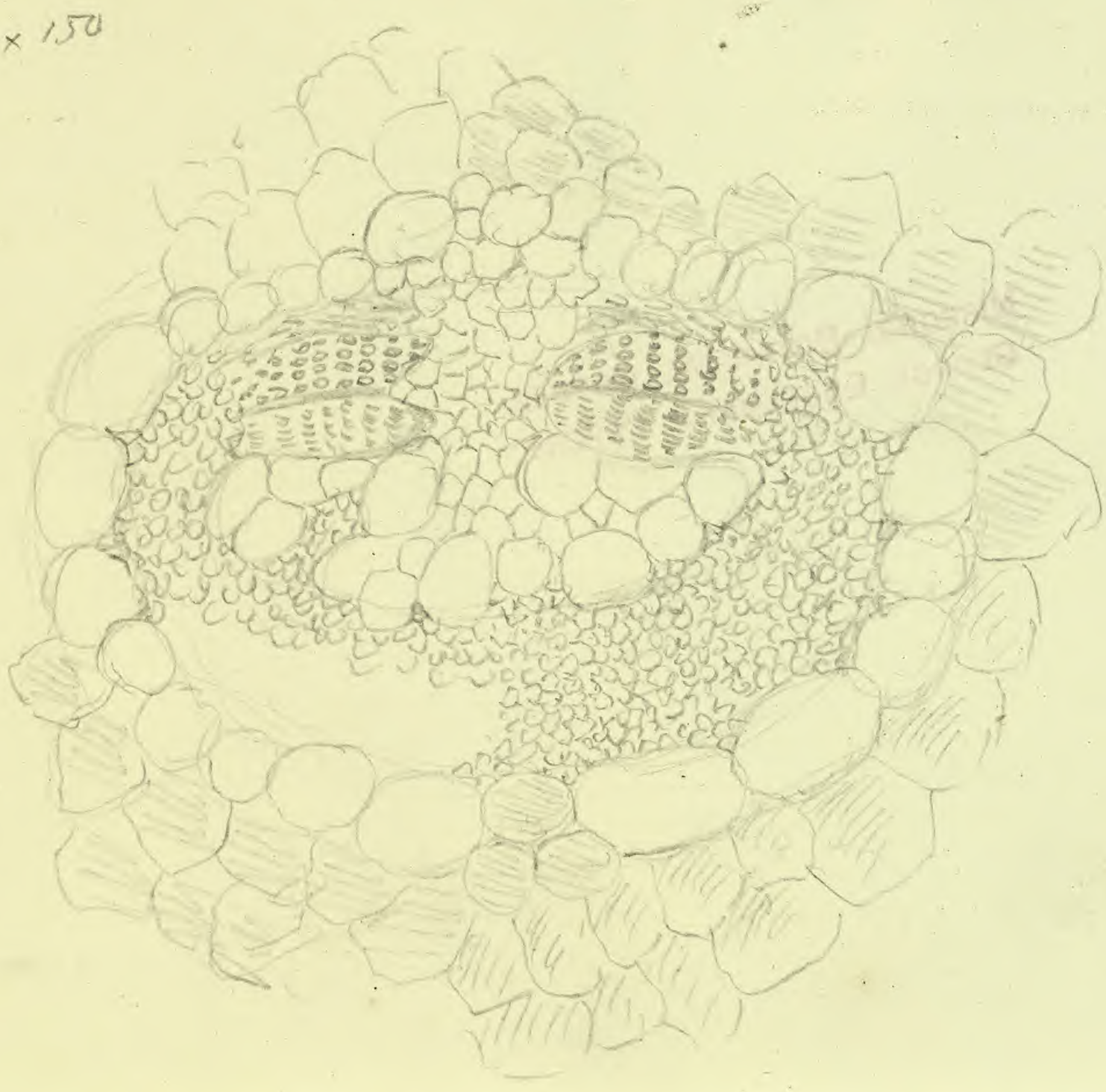
Jan 26 1876

Aster ovvidentalis

Yellowstone, Dr Parry 1873

× 150



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A. occidentalis Jan 28 1876

apparently passing into balsamea

Gallon Range of Rocky Mtns, Idaho
7000' alt Aug 1861

×30

very few and small bulbiferous cells
therefore passing into balsamea

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GEORGE ENGELMANN HERBARIUM
ST. LOUIS, MO.

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Smith & Curtis
DRUGGISTS
Corner Fifth and Olive Streets

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